

## **CALIBRATION-FREE GAZE TRACKING UNDER NATURAL HEAD MOVEMENT**

### **Abstract of the Disclosure**

A method and computer system for tracking eye gaze. A camera is focused on an eye of subject viewing a gaze point on a screen while directing light toward the eye. Eye gaze data pertaining to a glint and pupil image of the eye in an image plane of the camera is sampled. Eye gaze parameters are determined from the eye gaze data. The determined eye gaze parameters include: orthogonal projections of a pupil-glint displacement vector, a ratio of a major semi-axis dimension to a minor semi-axis dimension of an ellipse that is fitted to the pupil image in the image plane, an angular orientation of the major semi-axis dimension in the image plane, and mutually orthogonal coordinates of the center of the glint in the image plane. The gaze point is estimated from the eye gaze parameters.